

Assessing Learning Spaces: Purpose, Possibilities, Approaches

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About Assessment

The deep interest in knowing what would improve the quality of learning is driving assessment into every nook and cranny of colleges and universities. Colleges and universities are more accountable for educational effectiveness and for the performance of their students and graduates. Thus, concern about improving educational quality, coupled with the need for individual campuses to demonstrate learning outcomes, has made assessment an unavoidable activity on campuses since the 1980s.

Renewed efforts to enhance quality and increase persistence and success for all students—particularly under-represented minorities—has made it essential to collect evidence on a regular basis of the extent to which effectiveness has been achieved, evidence intended to mobilize attention to improving educational conditions in light of the findings.

Assessment has always been a critical component in teaching and learning. Educators regularly assess at the individual student level, evaluating student work and giving grades, and some aggregate this information to guide improvements efforts at the level of an individual course. Assessment also moves beyond the course when faculty consider strengths and weaknesses of students' work in relation to departmental learning goals. The department can then use these findings and other data, such as a graduating senior survey, to inform decisions about curriculum, pedagogy, and perhaps to prepare for a specialized accreditation review or an institutional review.

The demand for information from assessment has broadened its definition and purpose, now embracing the collection and analysis of student learning outcomes and other institutional outcomes, including cost-effectiveness, satisfaction, and the achievement of standards—all to determine the impact of educational programs, practices, and policies.

Good information in the right hands can be a vitally important lever for change. When done well, assessment can provide a foundation for wise planning, budgeting, improvements to the curriculum, pedagogy, staffing, programming, and ensuring that resources are dedicated to what is most effective.

Assessment Purpose and Framework

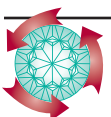
To achieve its practical aim, assessment has been conceived of as an iterative process—an assessment loop that involves setting goals and asking questions, gathering data and evidence, analyzing results, sharing and applying results, and using results by taking action.



Figure 1. Assessment Cycle

The full cycle of assessment must be executed to really do assessment well. Too often things get hung up at the phase of gathering evidence. Sometimes the cycle stalls here for want of better or more definitive data, and other times it is a failure to develop and implement an action plan based assessment data.

If assessment is to inform future practice and the activities of assessment—asking questions, and gathering and analyzing evidence—are similar to the goals of research, assessment is a particular kind of “action research.” It focuses on collecting data to demonstrate impact and to plan for improvement, with the practical goal to inform local action. The framework for assessment advocated for learning spaces flows from this standard statement of purpose.



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Reflections

An Architect's Perspective on Assessment Timothy Winstead, The Freelon Group

When I look back at the projects with which we have all been involved, my sense is that although we find it easy to share experiences about the tangible process of planning, of imagining and designing spaces for learning, it is more difficult to talk about the less tangible process of assessing how the resulting spaces work in the service of learning. When the project is complete and all goes well, we consider the project a success. In part, this is because most new or redesigned spaces do not hit their stride for some time. It takes time for users of the spaces come to understand how they work or what spaces will allow them to do. This is perhaps similar to the notion that the look and feel of something new (that works) always makes a good impression, much like the smell of a new car. Unfortunately it is too often we short-circuit the arc from *planning to assessing*, on the premise that if the goal of the project is preparing students for their future, it is far less easy to measure.

I feel strongly that the vitality of a place influences the energy of the people who experience it, that more social and interactive spaces increase the nature of collaboration and productivity. This is being measured and documented in regard to corporate, health and research facilities, and there are important lessons to be learned from the work of professionals beyond academe about the impact of space on learning.

After more than twenty years of our collective efforts to get the planning right—evidenced by the growing number of spaces that are demonstrably effective in the service of learning, including those featured in this guide—it is time. We should be intentional in gathering evidence about whether the spaces we design are making a difference, if the goals set for the project were measurable and met. This should be a collaborative effort engaging users and designers, those involved with a particular project and in ways that engage us all as a community.

In producing this guide, it has become clear that it is not only possible to capture, distill, share, and advance what we are learning about how space matters to learning, but that it is imperative to do so.

Assessment and Learning Spaces

The assessment of learning outcomes—defined as what students will know, be able to do, the skills and competencies that they can forward—is the current coin of the educational assessment realm. However, when it comes to the issue of the physical environment, we must ask:

- *what is important and possible to measure about the impact of space on the experience of learning?*

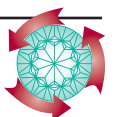
Assessment results should ultimately answer this question: how we will know the spaces we are planning will make a difference, or how do we know what difference current spaces are making in regard to the quality of the learning experiences of our students?

The assessment loop can be applied to all phases of designing learning spaces—from planning to post-occupancy, ongoing assessment and redesign of spatial affordances. In fact, planning for assessment should be intentionally integrated into each stage of planning, designing, and using learning spaces. Take care, however, that assessment results not dictate final decisions; professional judgments must be applied in interpreting evidence and taking appropriate action.

As with all assessment undertakings, assessing learning spaces is fundamentally about asking the right questions. To address the current pressure for accountability for student learning, it is critical that learning spaces go beyond traditional measures of use, efficiency and service, and detail the extent to which the space enhances the experiences of learning and teaching.

From stories featured in this guide and the experience of other reflective practitioners, valuable questions to be incorporated into the process of planning include:

- Time and resources are being spent on designing spaces to help students learn more effectively and creatively. What evidence exists on our campus and in other settings about the physical affordances of spaces that accommodate research-based pedagogical approaches? What evidence will we be seeking as these spaces are being used in the future?



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- 21st century students are expected to become creative risk takers, skilled as communicators, integrative learners, and resilient experimenters. What will be our measures of success in achieving spaces that achieve such learning outcomes? What spatial affordances nurture leaders for the future?
- Learning spaces are designed to enable students to tackle ill-structured problems, actively engage in real problem solving, and interact with peers and faculty. Where is there evidence that such learning experiences can be facilitated by the physical learning environment?
- Research shows that today's students benefit when they perceive a sense of belonging, can focus on hands-on learning, and participate in team-based approaches—to what extent does space contribute to these goals?
- Learning spaces are part of the larger palette of physical spaces on a campus, many with potential to serve as formal and/or informal settings for multiple constituencies, reflecting the 24/7 reality of 21st century learning. What do we need to know about how our emerging project contributes to the larger good? Where does our project fit? How will our planning and this project inform the future of learning spaces on our campus? What evidence will we look for to answer such questions?

The *how do we know* findings presented in the profiles of case studies featured in this handbook illustrate the diversity of possible assessment approaches and findings. Note that some present results as quantitative increases: the number and quality of student majors in particular field, significant (dramatic) increases in faculty/undergraduate research, as well as activity and interest in interdisciplinary fields. Information is presented about greater numbers of prospective employers and/or external partners connecting to the campus, particularly in STEM fields. An increase in the number of domestic students of color and women graduating with a STEM major is documented in many cases.

Findings that are more perceptual are woven throughout the profiles and stories, about how students feel more comfortable and productive as learners in a particular space, about how they seeing spaces as conducive to teamwork, collaboration, as “their” spaces.

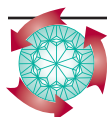
Reflections

How Campus Classroom Managers Might Use This Guide Jeremy Todd, University of Minnesota

One thing we have begun to challenge ourselves with is getting people on the same page with how they perceive space. I think a key trick to assessment is making it intuitive as well as defining a consistent vocabulary for everyone involved. During a SCUP presentation, I talked about the learning space spectrum—a range from focus work (quiet and reflective, to social, to collaborative (more noise, more energy).

We also began to look at the first impression of space and how it affects students' opinion of that space. The sociability of space in environmental psychology asks “how friendly is that space.” We find that spaces, like people, cause us to create a first impression. Those first impressions affect how much we trust the space or person. When we talk about collaboration being based on trust we have started to add concepts of the intimacy gradient into our conversations. This is the idea that we like to navigate space from public to private. Many buildings offer a first impression that feels as if you walked into a quiet/focus zone that does not foster interaction and collaboration.

There are also some ideas that I have had about how we could make the assessment process into an application that would allow faculty and students to capture spaces and rank them. It would allow people to begin to define the spectrum of what is working and what isn't. It would also account for the idea time matters. Libraries that are largely focus zones during the day convert to collaborative zones in the evening (as long as the space is flexible.)



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Types of Assessments and Measures

Although it is easy to be preoccupied with the array of assessment methods and types (Figure 2), the selection of measures should flow from assessment goals, needs, and questions. For example, assessing learning spaces designed to foster student-faculty discourse and interaction to spark new areas of interest could include:

- Collecting counts and observations of interactions within the spaces.
- Reviewing data from faculty activity reports documenting exploration of new ideas within the space.
- Reports of pedagogical modifications enabled by the spaces, supplemented with in-depth examples elicited through interview with student/faculty focus groups.
- Student survey measures of satisfaction with the space in regard to the quality of interaction, flexibility, etc.

Such evidence reflects a combination of quantitative and qualitative data, as well as *direct measures* including observations of space use and documentation of new ideas and approaches explored and *indirect evidence*, such as student survey results about perceptions and behaviors. Combined, this evidence provides information that can be used as part of the assessment protocol established during the planning process.

The assessment loop suggests that assessment is ongoing and almost always a work in progress. As the needs of students and faculty change and space needs change, new assessment questions will emerge. Learning space assessment is essential to ensuring that spaces continue to contribute to learning and to serve institutional goals. Even more, assessment is critical to making the case for requisite investments in the physical plant, perhaps the most significant capital investment beyond investing in the intellectual capital of a college or university community.

Genuine assessment requires time to take root and influence practice. It can be sustained only if planning and implementation occur in an atmosphere of trust, when there is real commitment to using the evidence from assessment for shaping and reshaping learning spaces.

Figure 2. Types of Assessment

Needs Assessment	Identifying student needs (e.g. student perceived, or research supported).
Tracking	Monitoring who uses programs, services and facilities (e.g. raw numbers, frequency, age, class standing, gender, race, residence, etc).
Satisfaction Assessment	Measuring the level of satisfaction with programs, services, and facilities.
Student Cultures and Campus Environments Assessment	Assessing the collective perception of campus and student experience (e.g. campus climate, academic environment, nature and quality of student-faculty interaction, residential quality of life).
Comparable Institution or Standards Assessment (Benchmarking)	Identifying how the quality of programs, services and facilities compare with peer, aspirational institutions; or using national or specialized standards to assess programs and services (e.g. national assessment inventory— Educational Benchmarking Inc., or departmental review by consulting group).
National or standardized Assessments	Using nationally available accepted surveys, tests or rubrics.
Cost Effectiveness Assessment	Determining whether programs, services and facilities are worth the cost.
Learning Outcomes Assessment	Measuring the impact of services, programs and facilities have on students' learning, development, and success (e.g., retention, grades, graduation, time to degree).

